
ABSENCE OF NASCENT INFLORESCENCES IN *ARCTOSTAPHYLOS PRINGLEI*.—Jon E. Keeley,
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One of the defining characteristics of *Arctostaphylos* (manzanitas) is the production of inflorescences in the spring or summer, six to eight months prior to flowering (Fig. 1). Jepson (*Erythea* 8:97–99, 1938) was the first to point out this phenomenon and he coined the term “embryonic panicles” to describe this dormant stage in flowering. Later students of *Arctostaphylos* have replaced this with the term “nascent” inflorescence; defined as inflorescences “developing or coming into existence.”

Jepson was particularly taken with these structures because he noted that, although

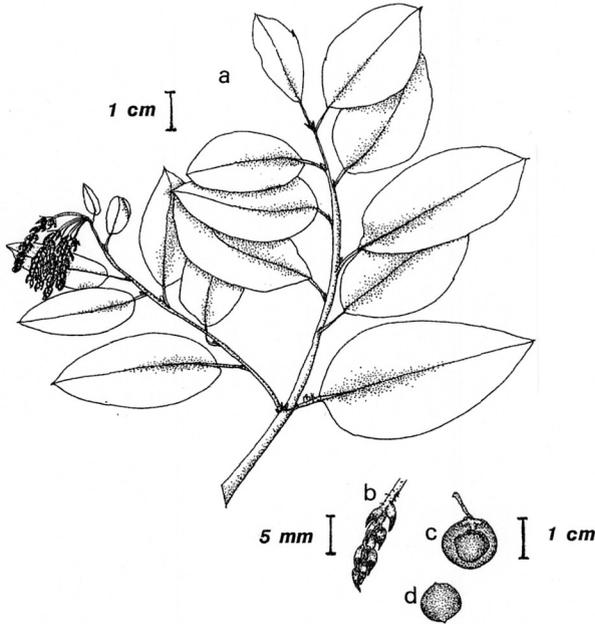


FIG. 1. a. Branchlet with dormant nascent inflorescence as it appears for 6–9 months of the year in *Arctostaphylos* species, except *A. pringlei*. b. Single branch of nascent inflorescence. c. Fruit (with solid endocarp, d) which is often present at the same time as nascent inflorescences (*Arctostaphylos rainbowensis* illustration is from Madroño 41:1–12).

flowering panicles were remarkably similar among species, “these embryonic panicles were found to be strikingly unlike.” He noted numerous examples in *Arctostaphylos* where these structures were of great taxonomic importance and concluded that “it now seems probable that in all species of *Arctostaphylos* the embryonic panicles will be found to exhibit characteristics which are of importance taxonomically.” Jepson’s prediction has held up and today these nascent inflorescences are key characters in the taxonomy of the group, which comprises 62 recognized species, and many more subspecific forms.

I report here, after having observed over 60 species of *Arctostaphylos* in the field, that nascent inflorescences are practically ubiquitous in the genus, save one species, *A. pringlei* Parry. This is a diploid species ($n=13$, J. Keeley), widespread throughout the southwest. The conclusion of lack of nascent inflorescences in *A. pringlei* is based on numerous observations of this species in late summer throughout much of its range from Baja California and southern California. In all cases, plants lacked nascent inflorescences. This phenological pattern is apparently typical throughout the range as data from Arizona populations of *A. pringlei* also indicate a lack of inflorescence development until immediately prior to flowering (A.D.S. Harlan, Ph.D. dissertation, University of Arizona, Tucson, 1977).

In addition to these observations, more detailed field study was made on two populations of this species from June 1992 through April 1993. One of the two populations was near Angelus Oaks (1725 m) in the San Bernardino Mtns (San Bernardino Co.) and the other at 2000 m in the Santa Rosa Mtns (Riverside Co.).

Populations were visited at irregular intervals up through the end of autumn (December 1992). During this period no nascent inflorescences were produced. In late autumn the axillary buds at the tips of new growth, which will give rise to flowering panicles the following spring, were swollen. These buds appeared to be entirely vegetative as hand sections of these buds, examined under 30 \times magnification, did not reveal any floral structures.

Populations were visited again in April 1993 and shrubs were in the initial stages of flowering. On the same shrub all stages of inflorescence development were evident, from dormant apical and axillary buds just breaking dormancy, to barely visible embryonic panicles and all stages of inflorescence development through to flowering. These flowering panicles arose from meristems on the old growth from the previous year, as is the case in other *Arctostaphylos* species.

Clearly, *A. pringlei* is set apart from the rest of *Arctostaphylos* in the lack of nascent inflorescence production. Outside the genus clearly evident nascent inflorescences are of limited distribution in the Ericaceae, although early floral development in the growing season prior to flowering is apparently widespread in the family (H. P. Bell and J. Burchill, *Canadian Journal of Botany* 33:547–561, 1955). *Arctostaphylos* is the largest of six genera within the subfamily Arbutoideae. The two most closely related genera, *Ornithostaphylos* and *Xylococcus* (indeed, older taxonomic treatments subsumed them in *Arctostaphylos*), produce nascent inflorescences in the year prior to flowering, as in *Arctostaphylos* (minus *A. pringlei*). *Comarostaphylys* and *Arctous* lack nascent inflorescences, as do North American *Arbutus* species; however the European *Arbutus unedo* does produce *Arctostaphylos*-like nascents (Keeley unpublished field and herbarium observations).

This profound phenological difference between *A. pringlei* and the rest of the genus sets this species apart and is consistent with other attributes. For example, Wells (Four Seasons 9(2):64–69, 1992) was so impressed with the uniqueness of *A. pringlei* that he erected a third section within subgenus *Arctostaphylos* for this species alone. The section, *Pictobracteata* Wells, is distinguished by large membranous floral bracts, and the phenological observations reported here support its distinction from the rest of the genus.